

ABSTRACT

The present invention provides a method and apparatus for managing water within a fuel cell. The method and apparatus include supplying a reactant gas stream at a flow rate that exceeds the rate of reactant consumption within the fuel cell by an amount that results in a sufficiently high velocity through the fuel cell to remove excess product water from an electrode of the fuel cell. The method and apparatus may be utilized regarding any reactant gas stream, including an oxidant gas stream, a fuel gas stream, or both. The oxidant gas stream is preferably an oxygen-containing stream, such as air, oxygen, or a combination thereof. The fuel gas stream is preferably hydrogen gas, regardless of whether the hydrogen gas is provided electrolytically or from a partial oxidation of a hydrocarbon.